

ABSTRACT

This invention discloses a broad band spread spectrum communications receiver with carrier recovery and tracking based on multiple phase shift keying (MPSK) techniques. The receiver comprises three subsystems: the synchronization system, the carrier tracking system and the data demodulation system. To demodulate the received signal, the receiver requires a carrier frequency that matches that of the transmitter as well as the chip and symbol clocks that are synchronized with those of the transmitter. In the disclosed system the carrier tracking subsystem continually tracks the carrier frequency of the received signal using a tracking scheme which is based on correlation techniques. The synchronization subsystem synchronizes the symbol clock and chip clock. These three subsystems interact with each other and result in an improved bit error rate (BER) performance.